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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,593	08/29/2003	Alan G. Wolfe	29966/US/2	9287

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EXAMINER	
XIAO, KE	
ART UNIT	**PAPER NUMBER**
2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/651,593	WOLFE, ALAN G.	
	Examiner	Art Unit	
	Ke Xiao	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-16, 20-23, 28, 30 and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (US 5,877,844).

Regarding independent **Claim 12**, Matsumoto teaches an apparatus for masking defects in a visual display (Matsumoto, Fig. 1 element 20), comprising:

a visual display unit having a plurality of display elements (Matsumoto, Fig. 4);

a translation unit coupled to the visual display unit that is structured to impart motion to the display unit (Matsumoto, Fig. 2 elements 28 and 68, Col. 5 lines 5-65, Col. 6 lines 55-60, Col. 7 lines 12-16);

a display signal source capable of providing input signals to the display elements on the surface of the visual display (Matsumoto, Fig. 1 element 30); and

a control unit coupled to the translation unit and the display signal source that is structured to exchange signals with the translation unit and the display signal source to controllably direct the movement of the display unit and to compensatingly shift the input signals to the display elements on the surface of the visual display, the input signals to the display elements being maintained at a fixed signal level as they are shifted, the

shifted input signals concealing display element defects on the display surface when displayed (Matsumoto, Figs. 1 and 4 elements 22 and 24, Col. 8 lines 53-63, Col. 9 lines 22-29, Col. 11 lines 42-50).

Regarding independent **Claim 23**, Matsumoto teaches an apparatus for masking visual display defects, comprising:

a display device having a viewing surface and a plurality of contiguous display elements disposed thereon, wherein a t least one of the display element is defective (Matsumoto, Figs. 1 and 4 element 20);

a signal source unit capable of directing a plurality of image signals to the plurality of display elements on the viewing surface (Matsumoto, Fig. 1 element 30);

a translation device coupled to the display device (Matsumoto, Fig. 2 elements 28 and 68);

a control unit coupled to the signal source unit and the translation unit and the display signal source that is operable to command the translation unit to shift the display in a predetermined direction and to command the signal source unit, the image signal being maintained at a fixed signal level as the image signals are being shifted, to compensate for the display device shift and to command the display thereof to obtain a stable image that conceals the at least one defective display element (Matsumoto, Figs. 1 and 4 elements 22 and 24 displaced pixel and corrected peripheral pixels, Col. 8 lines 53-63, Col. 9 lines 22-29, Col. 11 lines 42-50).

Regarding **Claims 13-15**, Matsumoto further teaches that the translation unit imparts motion to the visual display unit in at least a first direction and a second

direction, the second direction being substantially perpendicular to the first direction (Matsumoto, Figs. 3A-3B).

Regarding **Claim 16**, Matsumoto further teaches that the translation unit is mechanically coupled to the visual display unit (Matsumoto, Fig. 2).

Regarding **Claims 20-22 and 37-39**, Matsumoto further teaches that the display can be a field emission display, an active matrix liquid crystal display, or a cathode ray tube (Matsumoto, Col. 24 lines 48-65).

Regarding **Claim 28**, Matsumoto further teaches that the translation device is further comprised of a first actuator to impart a first motion to the display device, and a second actuator impart a second motion to the display device, the second motion being approximately perpendicular to the first motion (Matsumoto, Fig. 2 elements 28 and 64 Figs. 3A-3B, Col. 6 lines 55-60, Col. 7 lines 32-42).

Regarding **Claim 30**, Matsumoto further teaches that the actuators are piezoelectric actuators (Matsumoto, Col. 6 lines 55-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17, 24-27, 29 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 5,877,844) in view of Elliot (US 5,806,424).

Regarding **Claim 17**, Matsumoto fails to teach that the translation unit is electromagnetically coupled to the visual display unit. Instead Matsumoto teaches an electromechanical coupling (Matsumoto, Figs. 1 and 2). Elliot teaches that it is well known in the art to use magnetism to move a screen (Elliot, Col. 14 lines 19-27). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used magnetism for moving the screen as taught by Elliot to the device to Matsumoto since a magnetic moving device is more compact than a mechanical motion system.

Regarding **Claim 24**, Matsumoto fails to teach a first and second sliding means as claimed. Elliot teaches a display further comprising a first sliding means that constrains movement of the display to movement in a first direction, and a second sliding means that constrains movement of the display to movement in a second direction (Elliot, Figs. 8a-9b elements 44-47, Col. 15 line 60 to Col. 16 line 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to have added the first and second sliding means as taught by Elliot to the display system of Matsumoto in order to more precisely control the shifting means.

Regarding **Claim 25**, Elliot further teaches that the display device comprises a third sliding means that constrains movement of the display to movement in a third direction, the third direction being approximately perpendicular to the first and second directions (Elliot, Col. 17 lines 44-47).

Regarding **Claim 26**, Elliot further teaches that the sliding means are further comprised of linear bearings (Elliot, Figs. 8a-9b elements 44-47).

Regarding **Claim 27**, Matsumoto in view of Elliot fails to teach linear gas lubricated bearings. The examiner takes official notice that using linear gas lubricated bearings for moving or sliding any device is known in the art, evidence of which may be found in McMurtry (US 5,374,125, Col. 1 lines 34-64) which teaches a well-known gas lubricated bearing. It would have been obvious to one of ordinary skill in the art at the time of the invention to have used linear gas lubricated bearings in the translation device of Matsumoto in view of Elliot as opposed to generic bearings to slide the system in order to reduce friction.

Regarding **Claim 29**, Matsumoto fails to teach a third actuator as claimed. Elliot teaches using three actuators (Elliot, Figs. 8a-9b). To elaborate Elliot teaches that the display has the ability to show movement of the image in all directions X, Y and on a rotary axis (Elliot, Col. 17, lines 44-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a third actuator to the device of Matsumoto as taught by Elliot in order to provide a further degree of freedom of translation.

Regarding **Claim 33**, Matsumoto fails to teach a first and second position sensor as claimed. Elliot teaches a first position sensor to sense a first position of the display relative to a first direction, and a second position sensor to sense a second position of the display relative to a second direction, the second direction being approximately perpendicular to the first direction (Elliot, Fig. 8a-9b, elements 13a and 13b). It would have been obvious to one of ordinary skill in the art at the time of the invention to have

added the first and second sensors as taught by Elliot to the display system of Matsumoto in order to better measure the distance of the shifted display.

Regarding **Claim 34**, Matsumoto in view of Elliot teaches using two position sensors (Elliot, Figs. 8a-9b elements 13a and 13b) to sense a first and second position of the display device to a first and second direction but fails to teach a third position sensor for sensing a third position of the display device relative to a third direction. Elliot teaches that the display has the ability to show movement of the image in all directions X, Y as well a rotary axis, which is equivalent to a third direction (Elliot, Col. 17, lines 44-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a third sensor in the control device of Elliot so that the third position of the display device to the third direction can be detected in the same way as the first and second position sensors taught by Elliot.

Regarding **Claims 35 and 36**, Matsumoto in view of Elliot fails to teach using linear variable differential transformers or capacitance displacement sensors for the sensors. The examiner takes official notice that it is well known in the art to use such sensors, evidence of which may be found in van der Kuur (US 5,123,175, Col. 2 line 60 to Col. 3 line 45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use variable differential transformers or capacitance displacement sensors in the sensor system of Matsumoto as modified by Elliot because it would allow for more flexibility in design and implementation.

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 5,877,844) in view of Walker (US 6,359,662).

Regarding **Claim 18**, Matsumoto fails to teach that the display signal source is a display driver attached to a computer. Walker teaches a display driver attached to a computer (Walker, Fig. 2 element 202). It would have been obvious to one of ordinary skill in the art at the time of the invention to attach the display driver of Matsumoto to a computer as taught by Walker to allow for more flexible usability.

Regarding **Claim 19**, Matsumoto fails to teach that the image source is a video signal source. Walker teaches the image source includes digital video disk input (Walker, Col. 7 lines 28-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the signal source of Matsumoto with a video signal source as taught by Walker so that the image is capable of being input to a computer, thereby simplifying the device.

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 5,877,844) in view of Dabbaj (US 4,958,150).

Regarding **Claims 31 and 32**, Matsumoto teaches using piezoelectric actuators but fails to teach using solenoid or pneumatic actuators as claimed. Dabbaj teaches using piezoelectric actuators and that solenoid and pneumatic actuators can be used as well (Dabbaj, Col. 6 lines 61-65, Col. 9 lines 22-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the piezoelectric actuators of Matsumoto with the solenoid actuators and the pneumatic actuators as taught by Dabbaj in order to allow for more flexibility in design and implementation.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 5,877,844) in view of Makinouchi (US 5,699,145).

Regarding **Claim 40**, Matsumoto fails to teach that the control unit further comprises of a closed feedback control loop using a proportional-integral-differential algorithm. Makinouchi teaches a control unit including components from the speed control to position control system constituted by conventional proportional integral and differential controller (Makinouchi, Col. 11 line 66 to Col. 12 line 3, Col. 14 lines 58-62, Col. 15 lines 21-25), thus it is clear that Makinouchi teaches a control unit including a closed feedback control loop using a proportional integral differential algorithm. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the control unit as taught by Makinouchi in place of the generic control unit of Matsumoto because the control unit of Makinouchi is more stable and accurate in its calculations of speed and position.

Response to Arguments

Applicant's arguments filed October 19th, 2006 have been fully considered but they are not persuasive.

Regarding independent **Claims 1 and23**, the applicant argues that Matsumoto fails to teach "input signals to the display elements being maintained at a fixed signal level as they are shifted" and "image signals being maintained at a fixed signal level as the image signals are being shifted" respectively. The examiner respectfully disagrees. The examiner concedes that some signals are being adjusted in the correction method

of Matsumoto however these signals are not the ones being shifted, the defective signal being shifted. The surrounding pixels are being adjusted in order to allow for compensation in conjunction with the shift. The claim limitations as they stand read on only that the shifted signals are maintained the same which is exactly the point of Matsumoto's invention to keep the signals the same as they are suppose to appear by shifting the defective pixel and adjusted adjacent pixels accordingly.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571) 272-7776. The examiner can be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 3rd, 2007 - kx -

SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER